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Berkshire Adult Palliative Care Guidelines - End of Life Care – GL110

Approval

Approval Group	Job Title, Chair of Committee	Date
Drugs & Therapeutic Committee	Chair, Drugs & Therapeutic Committee	January 2013

Change History

Version	Date	Author, job title	Reason
2	January 2013	Susi Lund	Adoption of Berkshire Adult Palliative Care Guidelines

Author:	Susi Lund	Date:	January 2013
Job Title:	End of Life Nurse Consultant	Review Date:	January 2015
Policy Lead:	Networked Care Group Director	Version:	Version 2
Location:	Corporate Governance shared drive – GL110		

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Symptom management in the last days of life

This is about managing symptoms in the last days of life where the dying process has set in. It assumes that the therapeutic aims are therefore:

- To allow the patient to die comfortably
- To support the family/carers and to start to prepare them for bereavement
- To discontinue any burdensome or irrelevant clinical procedures

Key Prescribing Questions in the last days of life

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Pre-emptive prescribing

The pre-emptive prescribing of p.r.n. medication for anticipated symptoms can avoid great distress. The cost is negligible and it saves time on the part of both families and out-of-hours health professionals.

Typical maximum doses are described on page 22, but the doses needed by individuals vary widely: ***it is more important to assess the effectiveness of each p.r.n. before repeating or increasing* doses – if a p.r.n. is ineffective, try a different approach or seek advice (see flow diagrams)**

A typical "pre-emptive p.r.n." regimen for patients approaching the end of life might include:

- **Morphine sulphate** 2.5-5mg 1-4 hourly p.r.n. SC (or a dose based on prior regular opioid usage) for pain, cough or breathlessness
- **Midazolam** 2.5-5mg 2-4 hourly p.r.n. SC for anxiety or breathlessness
- **An antipsychotic**, for nausea or agitation. Either:
  - *Haloperidol 0.5-1.5mg 2-4 hourly p.r.n. SC ***or***
  - *Levomepromazine 6.25-25mg 2-4 hourly p.r.n. SC (use lower end of range for nausea; higher initial doses for agitation)
- **Hyoscine butylbromide** 20mg 2-4 hourly p.r.n. SC for respiratory secretions
- **Water for injections** 10ml (diluent for syringe pump)

NOTES *Haloperidol is used if minimising sedation is desirable. Levomepromazine is more sedating but is:

- a broader spectrum anti-emetic.
- preferred if severe terminal agitation is anticipated (i.e. where sedative properties are an advantage)

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Differences in specific circumstances:

- **History of seizures**: also prescribe midazolam 10mg SC p.r.n. t.d.s. for seizures
- **Parkinson's disease** – use cyclizine 50mg SC p.r.n. t.d.s. in place of haloperidol for nausea and midazolam (dose as above) in place of haloperidol for agitation. If an antipsychotic cannot be avoided, use levomepromazine in place of haloperidol
- **End stage renal failure** consider oxycodone as alternative to morphine (oxycodone 5mg ≡ morphine sulphate 10mg) and halving midazolam doses
- **Terminal haemorrhage is thought likely**: seek advice from the palliative care team
- **Intestinal obstruction**: seek advice from the palliative care team. In the dying phase, attempts to 're-start' the bowel are usually ineffective. Thus vomiting and colic are reduced with hyoscine butylbromide (anti-secretory and antispasmodic actions, respectively) and nausea with levomepromazine. For typical doses - see page 22.

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What can be stopped? Managing co-morbidities at the end of life

Diabetes and insulin [Ford-Dunn 2006 *Palliative Medicine* **20**: 197-203]	
Type 1 diabetes	• Give a once daily bolus of long-acting insulin (e.g. glargine) SC at 1/2 the previous total 24 hourly insulin dose (e.g. previously taking Actrapid 5units t.d.s. plus glargine 15units o.n. ⇨ total prior 24 dose 30units ⇨ give glargine 15units o.d. • Check finger prick blood sugar once a day, and adjust insulin to keep blood sugar between 5 and 15 mmol/l
Type 2 diabetes	• Oral tablets usually discontinued without substituting an alternative once the patient is unable to take orally (the lack of oral food intake is sufficient to control the diabetes). • No need to monitor blood sugar
Epilepsy and anti-seizure medication	

Epilepsy	At the end of life, once the patient can no longer take medication required to prevent seizures orally, their seizures are prevented with subcutaneous midazolam:
	• prescribe **midazolam** 20-30mg over 24 hours via subcutaneous syringe pump (the diluent is water) *and* **midazolam** 5-10mg p.r.n. SC
	• if the SC route is not readily available for p.r.n. use (e.g. the patient is in their own home), alternatives include
	  ○ **diazepam rectal solution** (0.5mg/Kg up to a maximum dose of 30mg p.r.n. PR)
	  ○ **buccal midazolam†** (Buccolam™) 10mg p.r.n. sublingually
	• increase the syringe pump dose if p.r.n. doses are needed and effective
	• If seizures persist despite midazolam 60mg/24hrs, seek advice from the Palliative Care Team (options include subcutaneous use of clonazepam or phenobarbital: seek advice before initiating these)

Corticosteroids	
Steroids *contributing to symptom relief* (i.e. symptoms likely to recur if stopped)	Convert to a subcutaneous bolus of dexamethasone each morning: • Oral dexamethasone: *dose is the same* (e.g. dexamethasone 4mg o.m. PO ≡ dexamethasone 4mg o.m. SC) • Oral prednisolone: *divide the dose by 6* (e.g. prednisolone 20mg o.m. PO ≡ dexamethasone 3mg o.m. SC (see Palliative Care Symptom Control Guidelines for more details)
Steroids *not contributing to symptom relief*	Stopped at the end of life when the oral route is no longer available. If the dying process is already established, Addisonian withdrawal effects are not usually relevant.
Cardiovascular conditions	
Angina	Medication usually discontinued without substituting an alternative once the patient is unable to take orally. The minimal exertion at the end of life minimises the risk of angina occurring. If angina symptoms are suspected, or there is particular concern, consider: • Transdermal glyceryl trinitrate (e.g. glyceryl trinitrate 5mg patch applied

	for 12hrs each day). *This is very rarely required at the end of life* • Symptomatic management with opioids (see pain flow diagram)
Hypertension	Medication discontinued without substituting alternatives once the patient is unable to take orally
Heart failure	***Mild-moderate***: medication usually discontinued without substituting an alternative once the patient is unable to take orally because of the minimal fluid intake at this stage. ***Severe*** (e.g. the patient is dying from end-stage heart failure), then consider: • Subcutaneous furosemide† (half the previous PO dose). Usually given as a SC bolus o.d. or b.d. • Opioids (See 'terminal breathlessness' section, page 25)

How to Prescribe a Syringe Pump

A syringe pump (S/P) is used to administer symptom relief to patients who are no longer able to swallow

It not only replaces existing symptomatic relief (e.g. regular Zomorph), but is titrated where necessary to take account of addition (p.r.n.) requirements

Step 1. Are the existing symptom control medications effective?

Look at dose requirements over the previous 24 hr period, including both:
- Regular symptom control medication (e.g. regular Zomorph)
- P.r.n. usage

If symptoms are controlled by the above, they (or equivalents) are put in the S/P → go to step 2

If symptoms are *not* controlled by the above, consider:
- Dose increases (especially where the above are partially effective)
- Alternatives (common examples are given in the symptom control flow diagrams below)
- Seeking advice from the Palliative Care Team

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Step 2. Converting *effective* symptom control medications into a S/P

Where symptoms have been controlled by SC p.r.n.s alone, the previous 24 hr requirements can be put into the S/P

Calculate the total 24 hr dose requirements of existing oral symptom control medications, then:

- For the following medications, the 24hr S/P dose *is half* the prior 24hr oral dose
  - Morphine (e.g. Zomorph), oxycodone (e.g. Oxycontin), haloperidol, levomepromazine
- For the following medications, the 24hr S/P dose *is the same as* prior 24hr oral dose
  - Cyclizine, metoclopramide, hyoscine butylbromide (Buscopan™)

Medicines without subcutaneous equivalents

- **Medicines for co-morbidites (e.g. diabetes, steroids, epilepsy)** – see guidance pg18
- **Non-opioid analgesia** (e.g. paracetamol, NSAIDs, antidepressant, antiepileptic drugs). Usually stopped when the oral route is lost: continuing opioids alone is usually sufficient. However, if pain is known to be opioid poorly-responsive, options include:
  - diclofenac† 75-150mg/24hr via SC syringe pump as an alternative NSAID (use a separate pump: diclofenac is not compatible with other medicines) or 100mg o.d. PR
  - clonazepam† 0.5-1mg o.d. SC as an alternative neuropathic adjuvant agent
  - If in doubt, seek advice from the Palliative Care Team

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Step 3. Prescribing the S/P

Write each drug, the dose required, the diluent (usually water for injections), followed by "over 24hrs via subcut syringe pump"

Combining medications in a S/P. Not all medicines can be combined in the same syringe. Commonly used combinations are described on page 21

Example. *Over the last 24 hrs, a patient's symptoms have been well controlled on:*

- *Zomorph 20mg b.d. PO → halved →* morphine sulphate 20mg
- *Metoclopramide 10mg t.d.s. PO → same dose →* metoclopramide 30mg
- *Midazolam, 2 x 2.5mg p.r.n. SCut doses → 5mg total →* midazolam 5mg

} over 24hrs via subcut syringe pump

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Converting prior opioid regimens to a syringe pump: Opioid Equivalence Table *[Twycross 2011, Mercadante 2011]*

These dose equivalences are **approximations** intended for use by experienced clinicians.

Always seek specialist advice before prescribing unfamiliar opioids. Use particular care when converting between higher doses or where doses have recently required rapid titration.
In such patients, consider a dose 25-33% lower than predicted by the ratios and ensure P.R.N.s are available

Codeine		Tramadol		Oral Morphine			Subcutaneous Morphine		Oral Oxycodone			Subcutaneous Oxycodone		Subcutaneous Diamorphine*		Fentanyl Patch**	Buprenorphine Patch*/**
Q.D.S. dose	24 hour total dose (mg)	Q.D.S. dose	24 hour total dose (mg)	4 hour / p.r.n. dose (mg)	12 hour MR b.d. dose (mg)	24 hour total dose (mg)	4 hour / p.r.n. dose (mg)	24 hour total dose (mg)	4 hour / p.r.n. dose (mg)	12 hour MR b.d. dose (mg)	24 hour total dose (mg)	4 hour / p.r.n. dose (mg)	24 hour total dose (mg)	4 hour / p.r.n. dose (mg)	24 hour total dose (mg)	Micrograms per hour	
60	240	50	200	2.5-5	10	20	2.5	10	1-2.5	5	10	1	5	1	5	½ x 12***	Conversion estimates vary widely : seek specialist advice
		100	400	5-10	20	40	2.5-5	20	2.5-5	10	20	2	10	2	10	12	
				10	30	60	5	30	5	15	30	2.5	15	2.5	15	12-25	
				15	45	90	7.5	45	7.5	20	40	2.5-5	20	5	30	25-37 (25+12)	
				20	60	120	10	60	10	30	60	5	30	7.5	40	37 (25+12)-50	
				30	90	180	15	90	15	45	90	7.5	45	10	60	50-75	
				40	120	240	20	120	20	60	120	10	60	10-15	80	62 (50+12)-100	
				50	150	300	25	150	25	75	150	10	75	15	100	75-125	
				60	180	360	30	180	30	90	180	15	90	20	120	100-150	
				70	210	420	35	210	35	105	210	15	105	20-25	140	125-175	
				80	240	480	40	240	40	120	240	20	120	25	160	125-200	
				90	270	540	45	270	45	135	270	Max**** Subcut	135	30	180	150-225	
				100	300	600	50	300	50	150	300		150	35	200	175-250	

				120	360	720	60	360	60	180	360	Volume	180	40	240	200-300	

*Morphine, oxycodone and fentanyl are recommended choices to ensure familiarity with a smaller number of opioids,as diamorphine is not readily available.
** Conversions to and from transdermal patches are especially unpredictable. Prescribers unfamiliar with such products are encouraged to seek specialist advice
*** Matrix fentanyl patches can be cut diagonally in half for smaller dose increments where a smaller patch size is unavailable (unlicensed use)
**** At usually available concentrations. If higher doses required, seek specialist advice about higher concentration preparations or alternatives

Conversions involving fentanyl patches

Commencing syringe pumps in patients receiving a stable dose of transdermal fentanyl

If the patient is pain free, leave the patch in place at the same dose and administer any medicines required for other symptoms via a syringe pump

If the patient is requiring extra opioid, leave the patch in place and give additional morphine (or oxycodone, if morphine intolerant) alongside via a syringe pump

Why?

The time taken for changes in fentanyl (whether increasing or stopping to change to a syringe pump) is too long for patients in the last days of life. The quickest solution is to add further opioid alongside the unchanged patch via a syringe pump. However, this does add an extra step in p.r.n. calculations.

P.R.N. calculations for combinations of fentanyl patches with morphine syringe pump

- Multiply fentanyl patch size by 2 to get equivalent 24 hr morphine syringe pump dose.
- Add this to actual syringe pump dose to get *overall total 24 hour SC morphine-equivalent dose*.
- Divide this total by 6 for the p.r.n. SC morphine dose.

Example for fentanyl 50 patch size plus 50mg **morphine** via syringe pump:

- The fentanyl patch is equivalent to 100mg of morphine over 24hrs via syringe pump (2×50)
- The overall regular opioid dose is therefore 150mg SC morphine (i.e. 100mg+50mg)
- The p.r.n. SC morphine dose is therefore 25mg (i.e. 150mg ÷ 6)

P.R.N. calculations for combinations of fentanyl patches with oxycodone syringe pump

- The fentanyl patch size is directly equivalent to the 24 hr oxycodone syringe pump dose.
- Add this to the actual syringe pump dose to get the *overall total 24 hour SC oxycodone-equivalent dose*.
- Divide this total by 6 for the p.r.n. SC oxycodone dose.

Example for fentanyl 50 patch size plus 10mg **oxycodone** via syringe pump:

- The fentanyl patch is equivalent to 50mg of oxycodone over 24hrs via syringe pump
- The overall regular opioid dose is therefore 60mg SC oxycodone (i.e. 50mg+10mg)
- The p.r.n. SC oxycodone dose is therefore 10mg (i.e. 60mg ÷ 6)

Combining drugs in a syringe pump

Not all medicines can be combined in the same syringe. Commonly used combinations are described below. If using other medicines concurrently, consider separate syringe pumps, seeking specialist advice about other combinations, or giving longer acting medicines separately as once daily SC boluses (i.e. haloperidol, levomepromazine, clonazepam)

	Compatible 2, 3 and 4 drug combinations	**Diluent**
Morphine *or* oxycodone *plus*:	cyclizine	Water
	haloperidol	Water
	hyoscine butylbromide	Water
	levomepromazine	Water
	metoclopramide	Water
	midazolam	Water
	octreotide	Sodium chloride 0.9%
Morphine *or* oxycodone *plus*:	cyclizine and haloperidol	Water
	cyclizine and midazolam	Water
	haloperidol and hyoscine butylbromide	Water
	haloperidol and midazolam	Water
	haloperidol and octreotide	Sodium chloride 0.9%

	midazolam and hyoscine butylbromide	Water
	midazolam and levomepromazine	Water
	midazolam and metoclopramide	Water
	midazolam and octreotide	Sodium chloride 0.9%
	levomepromazine and hyoscine butylbromide	Water
Morphine *or* oxycodone *plus*:	haloperidol, midazolam and hyoscine butylbromide	Water
	levomepromazine, midazolam and hyoscine butylbromide	Water

Prescribing other drugs via syringe pump

Drug	Uses	Usual starting dose	Typical maximum[4]	Diluents
Cyclizine	Nausea and vomiting	150mg/24hrs	150mg/24hrs	Water for injection
Haloperidol	Nausea and vomiting	0.5-1.5mg/24hrs	5mg/24hrs	
	Agitation Hallucinations	2.5-5mg/24hrs	10mg/24hrs	
Hyoscine butylbromide ('Buscopan')	Colicky pain Respiratory secretions GI obstruction	40-60mg/24hrs	120mg/24hrs	
Hyoscine hydrobromide	(hyoscine butylbromide is recommended if available: it causes less delirium)	1.2mg/24hrs	1.6mg/24hrs	
Metoclopramide	Nausea and vomiting	30mg/24hrs	80mg/24hrs	
Midazolam	Anxiety / agitation Breathlessness Sedation	5-15mg/24hrs	Seek advice if needing to exceed 60mg/24hrs	
	Seizures[1]	20-30mg/24hrs		
Levomepromazine ('Nozinan')	Nausea and vomiting	6.25mg/24hrs	25mg/24hrs	
	Agitation / sedation (1st line use)	12.5-25mg/24hrs	Seek advice if needing to exceed 100mg/24hrs[2]	
	Severe agitation not responding to haloperidol and midazolam	25-75mg[2]		
Octreotide	GI obstruction (hyoscine butylbromide often as effective[3])	300microgram/24hrs	600microgram/24hrs	Sodium chloride 0.9%

[1] **Midazolam** is used to replace oral anti-epileptics *in the last days of life*. Seek specialist advice in patients losing the oral route *who are not thought to be dying*: alternatives should be considered (e.g. IV anti-epileptic drugs).

[2] **Higher doses of levomepromazine** are sometimes required for severe *terminal* agitation unresponsive to other medicines. These are only appropriate when the dying process has irreversibly set in, there is no hope of improvement/reversal, and the therapeutic aim is to allow the patient to die comfortably. If in any doubt, seek specialist advice. See 'terminal restlessness' flow diagram page 24 for other important considerations

[3] For more information about the management of GI obstruction, see the Palliative Care Symptom Control Guidelines

[4]This is a guideline. Prescribers should consider seeking specialist advice if exceeding these typical maximums and/or if there is doubt about their effectiveness or appropriateness. Specialists sometimes recommend drugs or doses not described here. If in doubt there is specialist palliative care team advice available 24 hours a day.

Subcutaneous administration of drugs

Subcutaneous administration is useful where patients are unable to tolerate or manage medications by mouth. It may avoid the discomfort and access problems of the intramuscular or intravenous routes. However, few agents have a marketing authorisation for use by this route. Those drugs where the subcutaneous route is acceptable common practice are highlighted in each relevant symptom section, and summarised in the table below.

Drug Name	Diluent / flush	Subcutaneous administration	
		Acceptable	Licensed
Chlorphenamine	Sodium chloride 0.9%	Yes	Yes
Dexamethasone	Water / Sodium chloride 0.9%		
Diamorphine[1]	Water / Sodium chloride 0.9%		
Hyoscine hydrobromide	Water / Sodium chloride 0.9%		
Levomepromazine	Water / Sodium chloride 0.9%		
Morphine sulphate	Water / Sodium chloride 0.9%		
Octreotide	Sodium chloride 0.9%		
Oxycodone	Water / Sodium chloride 0.9%		
Alfentanil (AMBER[2])	Water / Sodium chloride 0.9%	Yes	No
Clonazepam	Water / Sodium chloride 0.9%		
Clonidine (AMBER[2])	Sodium chloride 0.9%		
Cyclizine	Water		
Diclofenac[3]	Sodium chloride 0.9%		
Fentanyl	Water / Sodium chloride 0.9%		
Furosemide[4]	Water / Sodium chloride 0.9%		
Haloperidol	Water / Sodium chloride 0.9%		
Hyoscine butylbromide	Water / Sodium chloride 0.9%		
Ketamine (AMBER[2])	Sodium chloride 0.9%		
Ketorolac (AMBER[2])	Sodium chloride 0.9%		
Metoclopramide	Water / Sodium chloride 0.9%		
Midazolam	Water / Sodium chloride 0.9%		
Olanzapine[5] (AMBER[2])	Water		
Phenobarbital[6] (AMBER[2])	Water		
Diazepam	n/a	**Not appropriate for subcutaneous use**	No
Chlorpromazine	n/a		
Prochlorperazine	n/a		

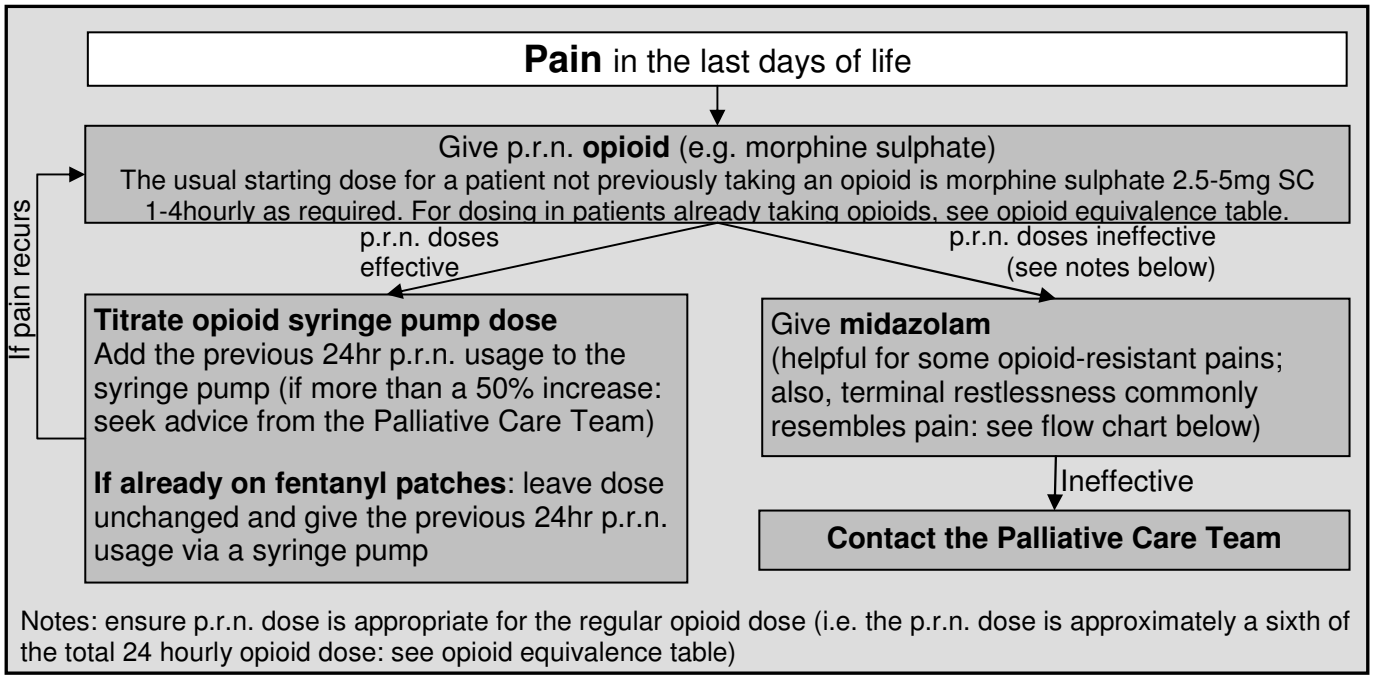
Notes

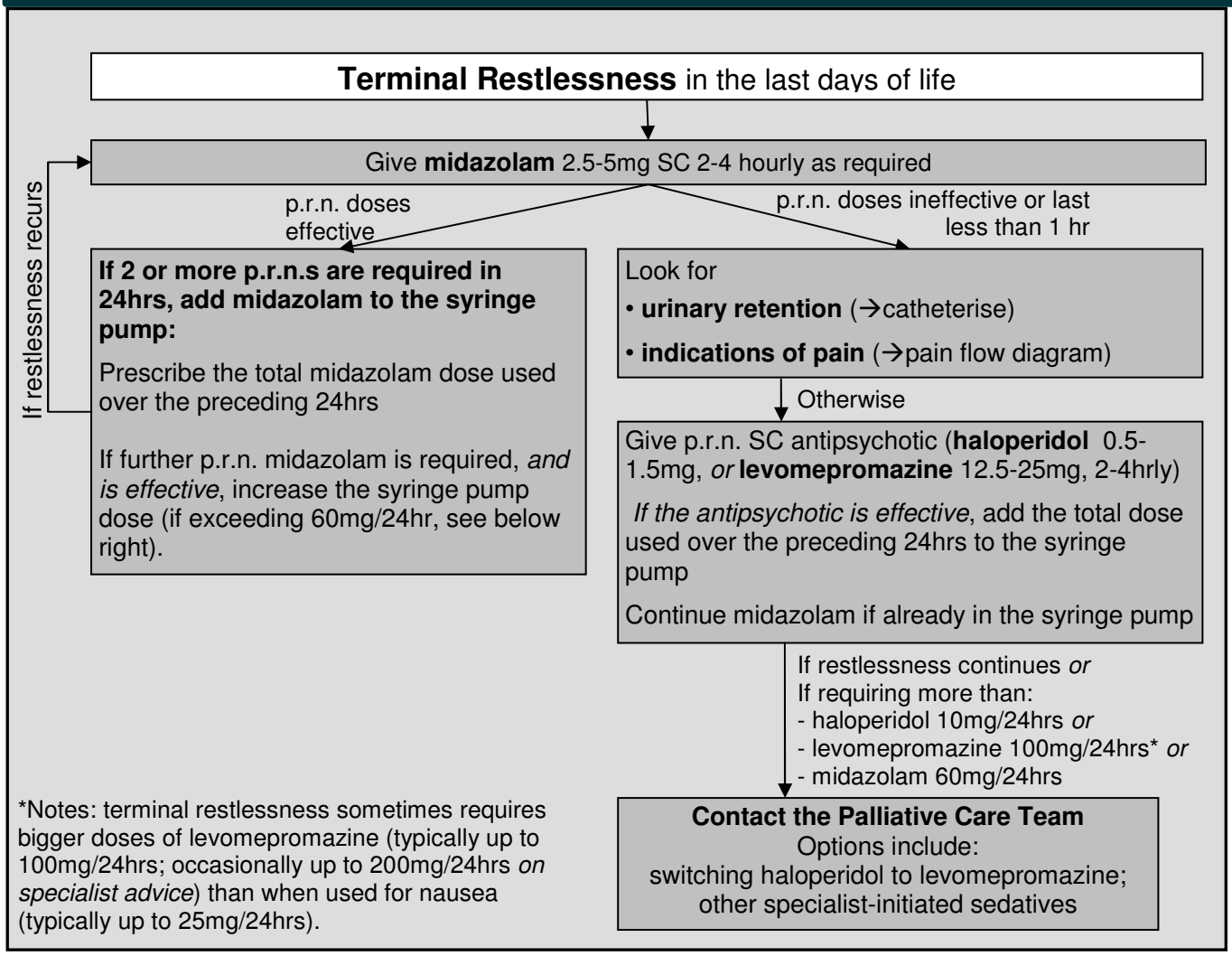
1. Morphine is preferred. The cost and availability of **Diamorphine** is variable, manufacturing problems may hinder obtaining it.
2. ‘‘**AMBER**’ refers to the drug traffic light scheme; it describes a drug that is only started on the advice of a specialist but that can subsequently be prescribed by a non-specialist.
3. **Diclofenac** is given by SC infusion only† (i.e. via syringe pump). Do not administer stat SC injections (tissue necrosis reported)
4. **Furosemide** can be given by SC infusion† or stat SC injection† in those where IV access is problematic. The overnight diuresis from 24 hr SC infusions may be undesirable in those without a urinary catheter/sheath.[Twycross 2011, Zacharias 2011]
5. **Olanzapine** ampoules specifically indicate that it is licensed for IM, but not IV or SC, administration However, stat SC injections† are used in palliative care without evidence of site reactions.[Elsayem 2010] SC

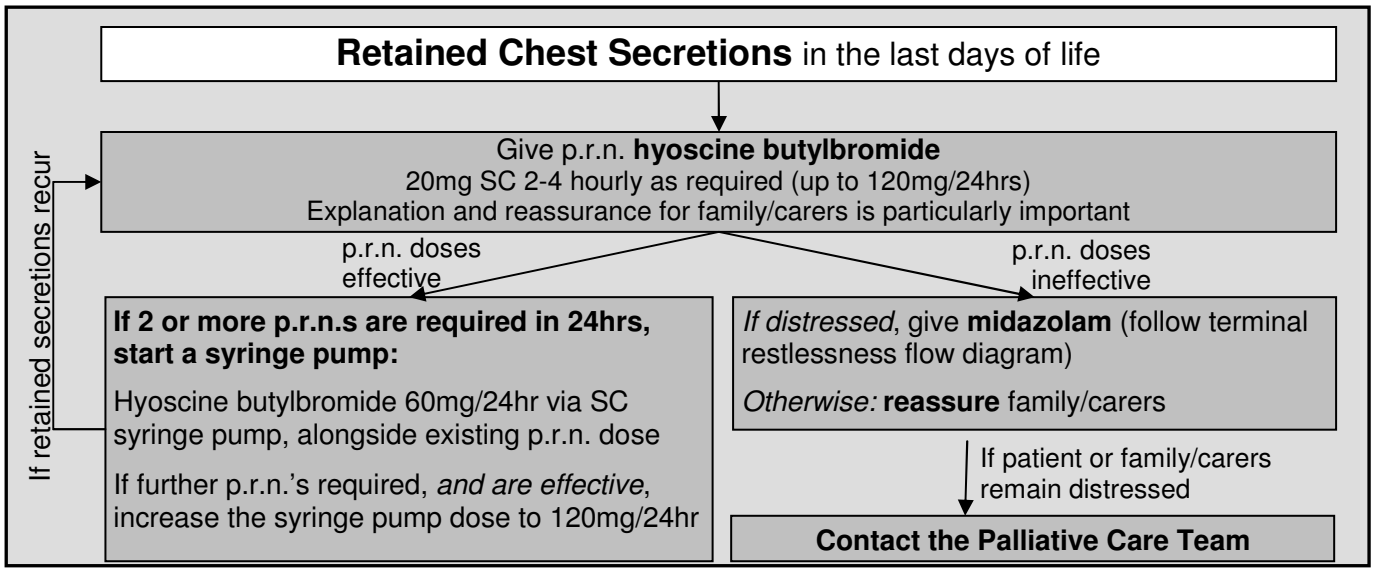
infusions (i.e. syringe pumps) are only used on the advice of a palliation specialist: limited data on compatibility with other medicines.

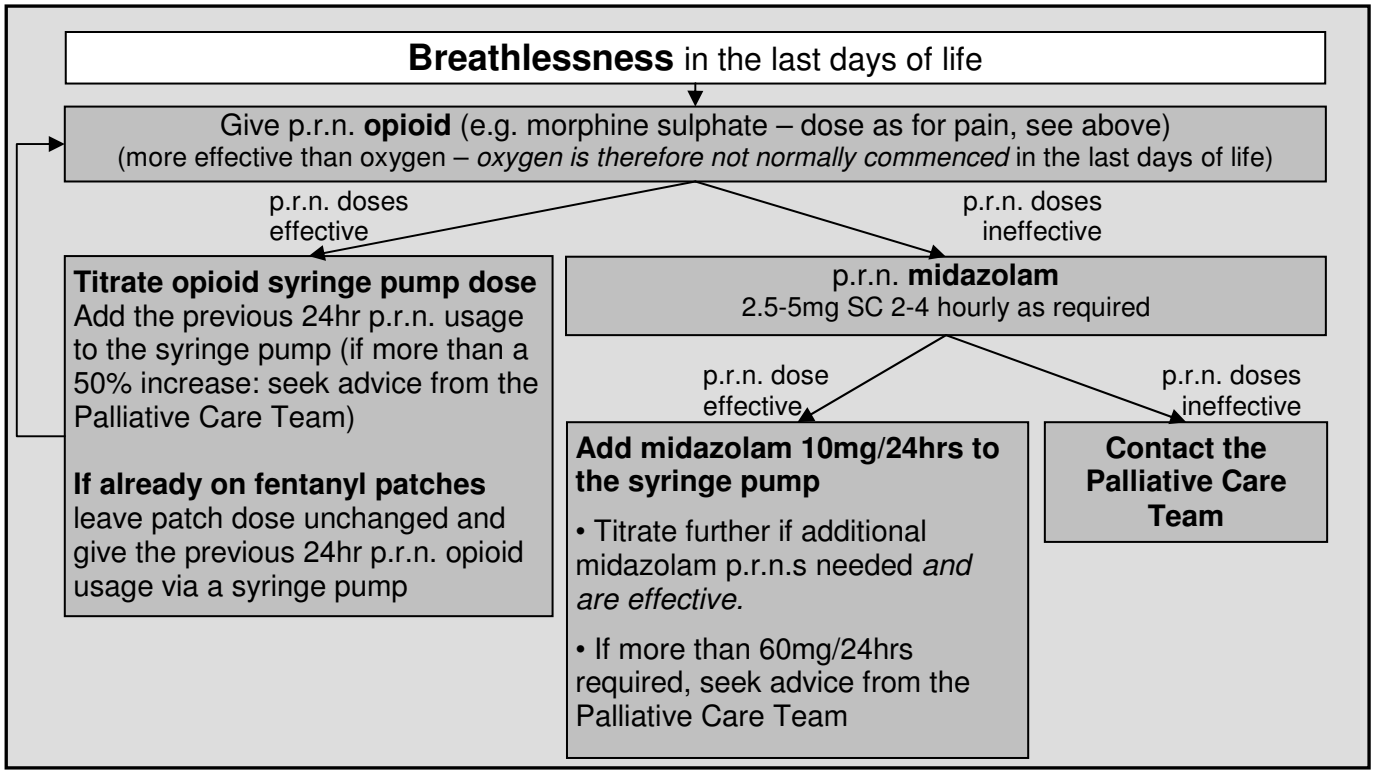
6 **Phenobarbital** is given by SC infusion† only (i.e. via syringe pump).[Twycross 2011] Bolus doses are given undiluted IM. Do not administer stat SC injections (tissue necrosis reported)

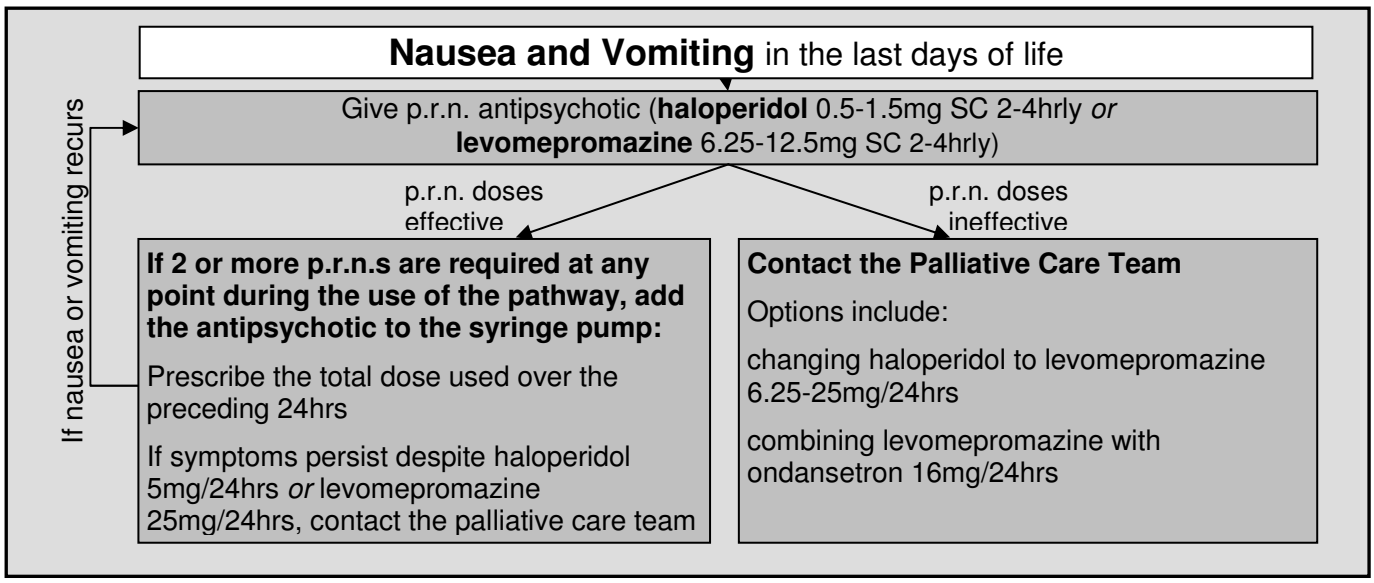
Uncontrolled Symptoms - Management in the Last Days of Life

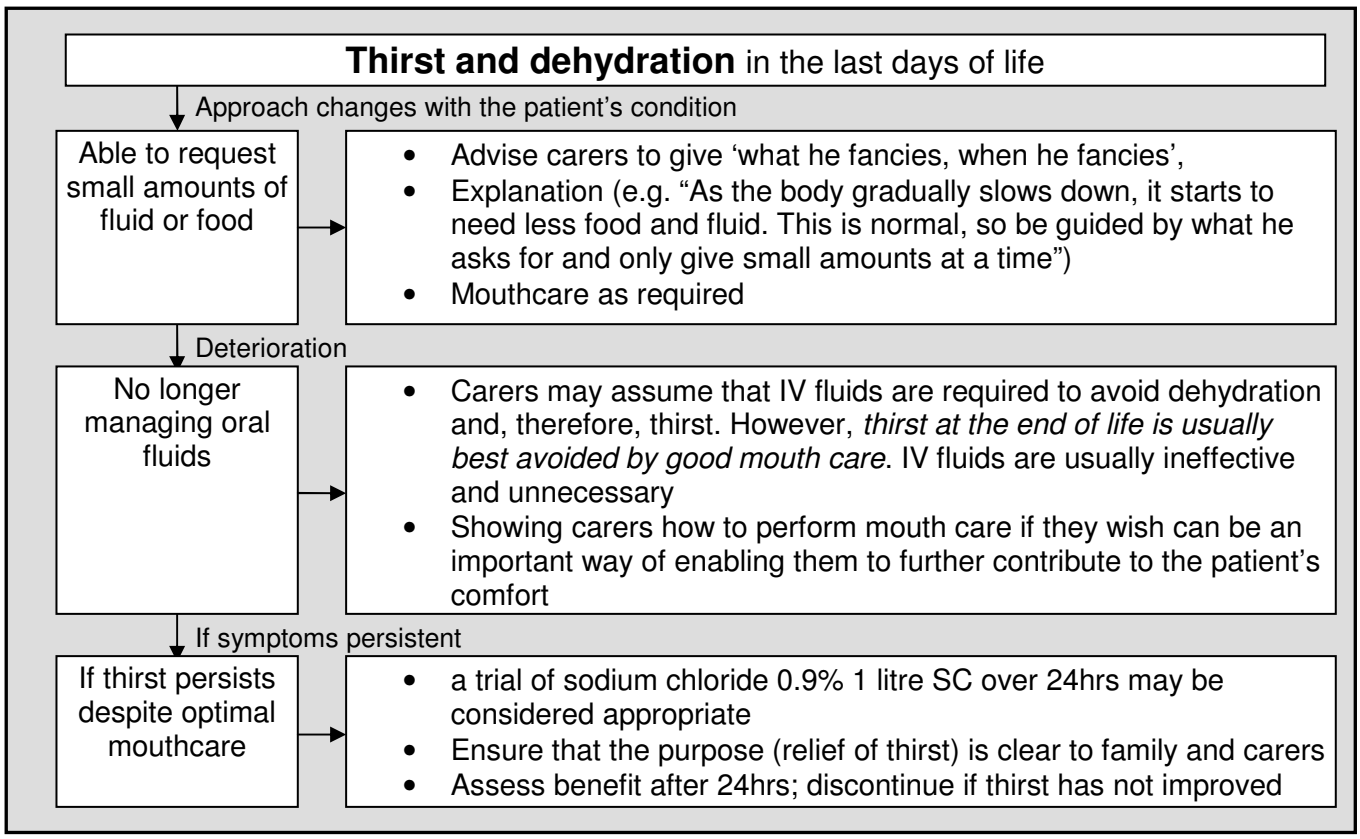

Pain in the last days of life
Give p.r.n. opioid (e.g. morphine sulphate)
The usual starting dose for a patient not previously taking an opioid is morphine sulphate 2.5-5mg SC 1-4hourly as required. For dosing in patients already taking opioids, see opioid equivalence table.
p.r.n. doses effective
p.r.n. doses ineffective (see notes below)
If pain recurs
Titrate opioid syringe pump dose
Add the previous 24hr p.r.n. usage to the syringe pump (if more than a 50% increase: seek advice from the Palliative Care Team)
If already on fentanyl patches: leave dose unchanged and give the previous 24hr p.r.n. usage via a syringe pump
Give midazolam
(helpful for some opioid-resistant pains; also, terminal restlessness commonly resembles pain: see flow chart below)
Ineffective
Contact the Palliative Care Team
Notes: ensure p.r.n. dose is appropriate for the regular opioid dose (i.e. the p.r.n. dose is approximately a sixth of the total 24 hourly opioid dose: see opioid equivalence table)


Terminal Restlessness in the last days of life
Give midazolam 2.5-5mg SC 2-4 hourly as required
If restlessness recurs
p.r.n. doses effective
p.r.n. doses ineffective or last less than 1 hr
If 2 or more p.r.n.s are required in 24hrs, add midazolam to the syringe pump:
Prescribe the total midazolam dose used over the preceding 24hrs
If further p.r.n. midazolam is required, and is effective, increase the syringe pump dose (if exceeding 60mg/24hr, see below right).
Look for
• urinary retention (→catheterise)
• indications of pain (→pain flow diagram)
Otherwise
Give p.r.n. SC antipsychotic (haloperidol 0.5-1.5mg, or levomepromazine 12.5-25mg, 2-4hrly)
If the antipsychotic is effective, add the total dose used over the preceding 24hrs to the syringe pump
Continue midazolam if already in the syringe pump
If restlessness continues or
If requiring more than:
- haloperidol 10mg/24hrs or
- levomepromazine 100mg/24hrs* or
- midazolam 60mg/24hrs
Contact the Palliative Care Team
Options include:
switching haloperidol to levomepromazine;
other specialist-initiated sedatives
*Notes: terminal restlessness sometimes requires bigger doses of levomepromazine (typically up to 100mg/24hrs; occasionally up to 200mg/24hrs on specialist advice) than when used for nausea (typically up to 25mg/24hrs).


Retained Chest Secretions in the last days of life
Give p.r.n. hyoscine butylbromide
20mg SC 2-4 hourly as required (up to 120mg/24hrs)
Explanation and reassurance for family/carers is particularly important
p.r.n. doses effective
p.r.n. doses ineffective
If retained secretions recur
If 2 or more p.r.n.s are required in 24hrs, start a syringe pump:
Hyoscine butylbromide 60mg/24hr via SC syringe pump, alongside existing p.r.n. dose
If further p.r.n.'s required, and are effective, increase the syringe pump dose to 120mg/24hr
If distressed, give midazolam (follow terminal restlessness flow diagram)
Otherwise: reassure family/carers
If patient or family/carers remain distressed
Contact the Palliative Care Team


Breathlessness in the last days of life
Give p.r.n. opioid (e.g. morphine sulphate – dose as for pain, see above)
(more effective than oxygen – oxygen is therefore not normally commenced in the last days of life)
p.r.n. doses effective
p.r.n. doses ineffective
Titrate opioid syringe pump dose
Add the previous 24hr p.r.n. usage to the syringe pump (if more than a 50% increase: seek advice from the Palliative Care Team)
If already on fentanyl patches
leave patch dose unchanged and give the previous 24hr p.r.n. opioid usage via a syringe pump
p.r.n. midazolam
2.5-5mg SC 2-4 hourly as required
p.r.n. dose effective
p.r.n. doses ineffective
Add midazolam 10mg/24hrs to the syringe pump
• Titrate further if additional midazolam p.r.n.s needed and are effective.
• If more than 60mg/24hrs required, seek advice from the Palliative Care Team
Contact the Palliative Care Team


Nausea and Vomiting in the last days of life
Give p.r.n. antipsychotic (haloperidol 0.5-1.5mg SC 2-4hrly or levomepromazine 6.25-12.5mg SC 2-4hrly)
p.r.n. doses effective
p.r.n. doses ineffective
If nausea or vomiting recurs
If 2 or more p.r.n.s are required at any point during the use of the pathway, add the antipsychotic to the syringe pump:
Prescribe the total dose used over the preceding 24hrs
If symptoms persist despite haloperidol 5mg/24hrs or levomepromazine 25mg/24hrs, contact the palliative care team
Contact the Palliative Care Team
Options include:
changing haloperidol to levomepromazine 6.25-25mg/24hrs
combining levomepromazine with ondansetron 16mg/24hrs


Thirst and dehydration in the last days of life
Approach changes with the patient's condition
Able to request small amounts of fluid or food
• Advise carers to give 'what he fancies, when he fancies',
• Explanation (e.g. "As the body gradually slows down, it starts to need less food and fluid. This is normal, so be guided by what he asks for and only give small amounts at a time")
• Mouthcare as required
Deterioration
No longer managing oral fluids
• Carers may assume that IV fluids are required to avoid dehydration and, therefore, thirst. However, thirst at the end of life is usually best avoided by good mouth care. IV fluids are usually ineffective and unnecessary
• Showing carers how to perform mouth care if they wish can be an important way of enabling them to further contribute to the patient's comfort
If symptoms persistent
If thirst persists despite optimal mouthcare
• a trial of sodium chloride 0.9% 1 litre SC over 24hrs may be considered appropriate
• Ensure that the purpose (relief of thirst) is clear to family and carers
• Assess benefit after 24hrs; discontinue if thirst has not improved

Questions about food and drink are difficult and emotive. Establishing what the concerns are, combined with an awareness of the evidence in this area, can help clinicians to respond appropriately.

- Thirst is closely related to mouth dryness [Viola 1997]. Mouth care and sips of water avoid thirst [McCann 1994]
- IV/SC fluids in the last days of life do not improve:

  - thirst [Viola 1997]
  - consciousness [Waller 1994]
  - biochemical indices of dehydration [Waller 1994, Morita 2006]
- The clinical impression of many palliative care practitioners is that IV/SC fluids worsen symptoms such as oedema, respiratory secretions, pain, or vomiting. However, this is not clearly demonstrated in the literature [Viola 1997]

Obtaining drugs out of hours

Patient location	Sources of medication required for palliative care emergencies
Home or care home	Specific community pharmacies stock the below list of palliative care drugs Out of Hours services stock medicines for use with patients they review out of hours
Community Hospitals	Ward stock includes medication required for most palliative care situations. Supplies of such medication are also held by Out of Hours Services
Acute Hospitals	Check ward stock list for availability of the required drug If the drug is not held on the ward, contact Clinical Site Manager, who will locate drug required from another ward or via the on-call pharmacist

Community Pharmacy Emergency Palliative Care Stock Scheme

These pharmacies guarantee to stock the drugs listed below

West Berkshire:

- Boots The Chemist, the Oracle Centre, Reading RG1 2AH, Tel: 0118 958 7529
- Tesco Supermarket, Napier Road, Reading, RG1 8DF Tel: 0118 980 7447
- Morrison Supermarket, Woosehill, Wokingham, RG41 9SW, Tel: 0118 979 4288
- Boots The Chemist, 89-91 Crockhamwell Road, Woodley, RG5 3JP, Tel: 0118 969 5253
- Boots The Chemist, Retail Park, Pinchington Lane, Newbury, RG14 7HU, Tel 01635 552 570

East Berkshire:

- Boots Pharmacy, 23 High Street, Ascot, SL5 7HG. Tel: 01344 623236
- Boots the Chemists, 13 Princess Square, Bracknell, RG12 1LS. Tel: 01344 424906
- HA McParland: Bridge Rd pharmacy, 119 Bridge Road, Maidenhead, SL6 8NA. Tel: 01628 623125
- HA McParland: 27 Yeovil Road, Owlsmoor. Sandhurst. GU47 0TF. Tel: 01344 775743
- Tesco Pharmacy. The Meadows, Sandhurst. GU47 0FD. Tel: 01276 889647
- HA McParland Pharmacy, 306 Trelawney Ave, Langley, SL3 7UB. Tel: 01753 541939
- HA McParland Pharmacy, 226 Farnham Road, Slough. SL1 4XE. Tel: 01753 525313
- Wraysbury Village Pharmacy, 58 High Street, Wraysbury, TW19 5DB. Tel: 01784 482430

Any community pharmacist can order supplies of a prescribed drug for the same day delivery if ordered before 11.30 and for the following morning if ordered before 5.00pm. (Monday to Friday).

Cyclizine injection	50mg/1ml
Dexamethasone injection	8mg/2ml
Diazepam rectal tubes	10mg
Diclofenac injection	75mg
Diclofenac suppositories	100mg
Fentanyl Matrix patches	12mcg/hr
Fentanyl Matrix patches	25mcg/hr
Fentanyl Matrix patches	50mcg/hr
Haloperidol injection	5mg/1ml
Hyoscine butylbromide injection	20mg/1ml
Levomepromazine injection	25mg/1ml
Levomepromazine tablets	25mg
Lorazepam tablets	1mg

MST tablets	5mg
Ondansetron injection	8mg/4ml
Oramorph solution	10mg/5ml
Oramorph Conc solution	100mg/5ml
Oxycodone injection	10mg/1ml
Oxycodone injection	20mg/2ml
Oxycontin tablets	5mg
Oxycontin tablets	20mg
Oxynorm liquid	5mg/5ml
Phenobarbital injection	200mg/1ml
Sodium chloride 0.9% injection	10ml
Tranexamic acid tablets	500mg
Water for injection	10ml

Metoclopramide injection	10mg/2ml
Midazolam injection	10mg/2ml
Morphine sulphate injection	10mg/1ml
Morphine sulphate injection	15mg/1ml
Morphine sulphate injection	60mg/2ml

Zomorph capsules	10mg
Zomorph capsules	30mg
Zomorph	60mg
Zomorph	100mg

References and contact telephone numbers

Contact numbers

West Berkshire

GP out of hours numbers
- West Call - 0118 978 7811

Palliative Care Team
- 24hour access 0118 955 0444
- CNS Weekend (9.00 to 17.00) 07899 915 619

East Berkshire

GP out of hours numbers
- East Berkshire out of Hours - 0118 936 5545

Palliative Care Team
- Weekdays (8.30 to 16.30) 01753 860 441 ext 6137
- Weekends (8.30 to 16.30) 0118 936 5545
- Overnight 01753 842121

Further information

Accessing LCP documentation and leaflets
- End of life care resources: http://nww.berkshirehct.nhs.uk/endoflifecare
- GPs can access and print further copies at: www.berkshirehealthcare.nhs.uk; log into the GP site and access the End of Life Care resources page.

Common queries
- Organ and tissue donation: www.organdonation.nhs.uk
- Donations to medical science: www.hta.gov.uk

Related policies and guidelines

- Guidelines for continuous subcutaneous syringe pumps used in adult palliative care 2011, BHFT
- Palliative Care Symptom control of adults guidelines 2011, BHFT
- Unified Do Not Attempt Cardiopulmonary Resuscitation (DNACPR) adult policy 2011, BHFT: CCR007B
- Verification of Expected Death Policy, 2009

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